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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/826,278

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Joon-hyun Yang

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STANZIONE & KIM, LLP

919 18TH STREET, N.W.

SUITE 440

WASHINGTON, DC 20006

EXAMINER

ABDULSELAM, ABBAS I

ART UNIT

PAPER NUMBER

2629

MAIL DATE

DELIVERY MODE

03/27/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/826,278	Applicant(s) YANG, JOON-HYUN	
	Examiner ABBAS I. ABDULSELAM	Art Unit 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on March 11, 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 5-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-3, 5-21 and 24-26 is/are allowed.
- 6) ☒ Claim(s) 22 and 23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 03/11/09 has been entered.

Response to Arguments

2. Applicant's arguments filed 03/11/09 have been fully considered but they are not persuasive.

Applicant argues that a claim limitation as amended “establishing predetermined current flow paths to generate a reset voltage waveform and an address discharge voltage waveform during a reset period and address period” is not taught by the applied references. The examiner disagrees with the applicant’s argument.

Schermerhorn teaches voltage waveform generated by a driver circuit as shown in FIG. 8 including a configuration of second pair of FET's, which allows a secondary current to flow in either direction as the needed by the voltage being applied to the PDP 14 (col. 8, lines 61-66). Note that it would be obvious for one of ordinary skill in the art that in PDP driving method, one image frame may be divided into a plurality of subfields, and each subfield may comprise a reset period, an address period, and a sustain period (col. 8, lines 61-66). Hence the application of the

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both primary and secondary current flows in PDP 14 means applying the current to image frame which includes subfields.

Applicant also argues that the rest of claim limitations of claims 22 and 23 are not taught by the applied references. The examiner disagrees with the applicant's argument.

All claim limitations of claims 22 and 23 are correspondingly taught by Schermerhorn and Kenji as shown side by side in the rejection below.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 22-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schermerhorn (USPN 7081891) in view of kenji (JP 11-231829).

Regarding claim 22, Schermerhorn teaches a computer readable medium including data to perform a method of to providing driving voltages required for X and Y axes electrodes of a display panel the method comprising (*col. 4, lines 6-7 col. 4, lines 9-10, storing energy within the B-field established in the transformer coils, and injecting the stored energy into the display panel, col. 6, lines 16-18, Fig. 5 (lower solid line), and once the intended sustaining voltage is reached, it is held by the operation of the driver diode 26 and the PDP capacitors, see FIG. 5,*

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which illustrates voltage and current waveforms generated by the driver circuit shown in FIG. 4, note that it is obvious that the PDP (14) shown in Fig. 4 has X and Y electrodes.), current flow paths to generate predetermined driving voltage waveforms alternating in polarity with respect to reference voltage across X and Y axes electrodes according to predetermined switching sequences to drive the display panel during a sustain discharge period in sustain discharge period (col. 6, lines 8-18, Fig. 4 (17, 32, 26, 15), as shown in fig. 5, current through driver inductance 17 reaches a peak at $t_{sub.peak}$ current after which the current begins to decrease as the voltage continues to rise, and the voltage reaches a peak at $t_{sub.reson}$; as shown in FIG. 5A, the operation continues through decision block 56 to functional block 58 where the first electronic switch 32 is returned to its non-conducting state at $t_{sub.off}$ (fig. 5) with the voltage at the sustaining voltage level, and once the intended sustaining voltage is reached, it is held by the operation of the driver diode 26 and the PDP capacitors, see FIG. 5, which illustrates voltage and current waveforms generated by the driver circuit shown in FIG. 4, note that it is obvious that the PDP (14) shown in Fig. 4 has X and Y electrodes, col. 6, lines 1-2, also note as shown in Fig. 5, that at $T_{sub.start}$, the first electronic switch (32) is changed from a non-conducting state to a conducting state, furthermore, Fig. 4 is a section of a driver circuit for supplying a sustaining voltage to a flat plasma display panel, and Fig. 5 illustrates voltage and current waveforms generated by the

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driver circuit. Hence, the voltage and current waveforms are therefore illustrated with respect to sustain period), establishing predetermined current flow paths to generate a reset voltage waveform and an address discharge voltage waveform during a reset period and address period (col. 8, lines 61-66, voltage waveform generated by a driver circuit as shown in FIG. 8 includes a configuration of second pair of FET's, which allows a secondary current to flow in either direction as the needed by the voltage being applied to the PDP 14. Note that it would be obvious for one of ordinary skill in the art that in PDP driving method, one image frame may be divided into a plurality of subfields, and each subfield may comprise a reset period, an address period, and a sustain period Hence the application of the both primary and secondary current flows to the PDP 14 means applying the current flows to image frame which includes subfields).

Schermerhorn does not specifically teach switching current flow between current flow paths with respect to generating predetermined driving voltage.

Kenji on the other hand teaches a first switchable current path z1 and a second current path z2 are provided between a power source line 51 and a terminal px to apply electric voltage to each cell in common with one another (see the abstract).

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Schermerhorn's single driver

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circuit 30 shown in Fig. 4 with Kenji's first switchable current path z1 and the second current path z2, because the use of first switchable current path z1 and the second current path z2 helps reduce unnecessary electromagnetic radiation in a plasma display system as taught by Kenji (see the abstract)

Regarding claim 23, Schermerhorn teaches the single-sided driver circuit repeatedly supplies zero voltage and +/- multi-level voltages that are symmetric with respect to the zero voltage across the X and Y axes electrodes of the display panel during the sustain discharge period (col. 4, lines 58-61, col. 5, lines 13-17, Fig. 5 (32, 34, A), as shown in Fig. 4, the driver circuit (30) includes transistors (32, 34) such that the cathode of the second IGBT 34 is connected to the negative terminal of a series combination of two variable voltage supplies 40 and 42 while the anode of the first IGBT 32 is connected to the positive terminal of the combined voltage supplies 40 and 42, wherein the transistors (32, 34) are sequentially switched between conducting and non-conducting states, col. 5, lines 66-67, the voltage at the PDP input port A is at ground or zero potential, note from Fig. 4 that the first IGBT 32 the second IGBT 34 are symmetrical with respect to input port A., col. 6, lines 16-18, as shown in fig. 5 (which shows voltage from time, $t_{sub.start}$ to time, $t_{sub.off}$), at $t_{sub.off}$, the voltage is at a sustaining level, and a after reaching the sustaining voltage level, it is held by the operation of a driver diode (26) and PDP capacitors (15)).

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Allowable Subject Matter

5. Claims 1-3, 5-21 and 24-26 are allowed.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following art is cited for further reference.

U.S. Pat No. 6,853,144 to Macotte

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ABBAS I. ABDULSELAM whose telephone number is (571)272-7685. The examiner can normally be reached on Monday through Friday from 9:00A.M.to 5:30 P.M. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amare Mengistu, can be reached on 571-272-7674. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Abbas I Abdulsalam/

Primary Examiner, Art Unit 2629

March 22, 2009

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